

**PURE DUALS, DERIVED DUALS AND PARETIAN FISCAL
SOCIOLOGY**

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Abstract: Sheila Dow has been critical of mainstream economic theories, especially general equilibrium, for reflecting a ‘Cartesian mode of thought’ where dualistic categories are utilised to formally determine precise theoretical outcomes which, she contends, are poorly linked to reality. Instead, she advocates a less deterministic methodology that derives from a ‘Babylonian mode of thought’, where analytical categories do not depend on dualistic definitions. This study considers Paretian fiscal sociology in Italy with reference to Dow’s *strong anti-dualism* and the more *moderate anti-dualism* of Andrew Mearman, which accepts use of *pure duals* and *derived duals* on a temporary basis. It is concluded that the combination of non-Cartesian and Cartesian approaches to fiscal sociology and public finance that developed in Italy under the influence of Vilfredo Pareto are largely immune from Dow’s strong critique, because the Cartesian aspect is limited and qualified. They also share some methodological similarities with Mearman’s more moderate anti-dualism.

Key Words: Dualism, Fiscal Sociology, Pareto, Pareto School.

1) Introduction

In “Beyond Dualism”, Sheila Dow (1990) characterised ‘Cartesian/Euclidian’¹ mode of thought in terms of a theoretical determinism that is devoid of internal logical inconsistency. According to Dow, Cartesian thought relies on dualisms to provide the unequivocal definition of conceptual instruments through which precise outcomes, determined on a Cartesian plain or in Euclidian space, can be deduced from a closed theoretical system in an internally consistent manner. General equilibrium theory is characterised, by Dow, as the prime example of Cartesian thought in economics.

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¹ Mearman (forthcoming) refers to ‘Cartesian/Euclidian’ more simply as ‘Cartesian’ thought.

Her fundamental critique is that Cartesian theoretical systems are only possible through extensive reliance on false dualistic categories, and only acceptable, when theoretical outcomes are poorly linked to reality. Instead of the Cartesian mode of thought, Dow advocates a ‘Babylonian’ mode of thought for social sciences like economics, where dualism and Cartesian determinism are replaced by broader conceptual categories and an advocacy of pluralism of theoretical frameworks that consider related social phenomena. Babylonian thought is realist thought, so each theoretical framework should be oriented to aspects of reality, usually with some practical application in mind.

In recent times, there has been interest in Dow’s approach to modes of thought and the methodology of economics. Chick (2003), Jespersen (2002) and Mearman (2001) have examined the relationship between dualism, Cartesian and Babylonian thought in Keynes’s economics, post Keynesian economics, critical realism and analysis of open and closed systems. In addition, Dow has also continued to consider the issue (Dow 1997) and Mearman (forthcoming) has attempted to clarify and develop Dow’s concept of dualism. However, this interest has been largely confined to non-neoclassical economics, and does not appear to have attracted significant critical reaction from neo-classical economists.

The purpose of this study is to consider the approach to Italian fiscal sociology that developed under Vilfredo Pareto’s influence in light of Dow’s critique of dualism and the Cartesian mode of thought. This is relevant because her critique is directed toward a methodology of science where theory is based exclusively on a system of Cartesian thought. Paretian fiscal sociology, however, embraced two positivist systems of thought as complements: a non-Cartesian (but non-Babylonian²) system and a Cartesian system. Both Dow and Pareto developed their methodological approaches in response to the same concern: the necessity of avoiding false determinism in social theory. As a consequence, the contrast between Babylonian thought and the mix of non-Cartesian and Cartesian thought in fiscal sociology reveals the different philosophies of science associated with the two approaches.

This paper commences with a review and contrast of Sheila Dow’s ‘strong’ anti-dualism position and Andrew Mearman’s more ‘moderate’ anti-dualism position, including discussion of Mearman’s useful distinction between what he calls dual₁, which is referred to in this paper as a *pure dual*, and dual₂, which is referred to in this paper as a *derived dual*. This is followed by a discussion of the relevance of the anti-dualism thesis to Italian fiscal sociology and general overview of the central characteristics of Paretian fiscal sociology that developed in Italy in the early 20th Century. The use of duals, especially *derived duals*, by the Pareto school is considered, starting with the ontological distinction between logical and non-logical action, and the consequent methodological implications of the distinction. It is argued that duals used in fiscal sociology were never *pure duals* because analysis based on the Cartesian system is never absolute, but always conditioned by ‘interferences’ from social influences examined using a non-Cartesian system. The paper concludes by briefly contrasting Dow’s methodology based on Babylonian thought and the methodology associated with Paretian fiscal sociology.

² Babylonian thought rejects ethical neutrality in science, whereas the Paretian non-Cartesian approach treats ethical neutrality as one of the fundamental goals of social science.

2) Anti-dualism

Sheila Dow (1990) has rejected Cartesian thought because knowledge of social phenomena is unavoidably imperfect, and advocated a non-deterministic or 'Babylonian' mode of thought, where the logical analysis within one paradigm is complemented by analysis developed from within other paradigms. These various perspectives cannot be united within a single comprehensive and cohesive formal system on the basis of value free logic alone, because the heuristic devices within each analytical framework may be predicated on different epistemological principles that relate to reality through different ontological criteria. Consequently, Babylonian thought accommodates multidisciplinary pluralism, whereby the outcomes of related theories are considered, with inconsistencies between different theoretical frameworks accepted, but ultimately smoothed over through the synthetic judgement to unite the, necessarily partial, components of reality associated with various theories.

Dualisms are fundamental to Dow's critique of the Cartesian mode of thought, because they provide the means by which theoretical models achieve a determinism that is poorly connected to reality. In this regard, formalised analysis grounded in the Cartesian mode culminates in the development of atomistic theory, with each of the elements that comprise the model categorised in dualistic terms: an element is 1 (category x) or it is 0 (not category x). In regard to mainstream economics, Dow generally accepts the aspects of critical realism (Dow 1997, p.88) which suggest that an ontological view of reality that relies on atomism and dualistic categories will determine epistemology, methodology and ultimately the analysis of highly formalised and determinate theory.

Dualism is defined as the "practice of organising thought by means of all-encompassing mutually exclusive categories, with fixed meaning" (Dow 1990, p.143). Each of the three attributes of the definition are important: the all encompassing requirement ensures that each category is complete so it is defined globally; the mutually exclusive requirement ensures that the two elements of each dualism constitute a unique binary classification ('x' or 'not x'); and the fixed meaning ensures that the dichotomy of meaning associated with the categories is unequivocal and enduring. However, Dow's definition of dualism does not extend to all opposing categories. In particular, the Hegelian notion of opposite-categories is deliberately excluded because both of the bi-polar categories gain meaning with reference to each other.

The individual theoretical elements upon which modern general equilibrium is constructed, such as individuals, goods, factors and ordered preferences, may well be classified as all-encompassing and mutually exclusive and defined with fixed meaning. Similarly, the theoretical outcome of general equilibrium is dualistic, with the economic state typically represented as "an equilibrium" point, or "not an equilibrium" point, in commodity space etc. Dow contends that the Cartesian mode of thought "achieves its most consistent expression in general equilibrium theory, ... [and] is implicit also in much of the rest of mainstream theory." (Dow 1990 p.146). As such, she considers that general equilibrium theory has detached from reality by

overemphasising theoretical closure (by focusing on a state where there is no force for change) and by underemphasising the open ended movement of the real economic phenomenon (by not focusing on the interacting and non-deterministic influences on substantial influences on the pattern of economic and social movement over time).

In stead of the Cartesian mode of thought, Dow's Babylonian approach emphasises "hermeneutics at the methodological level, and epistemology at the theoretical level" (Dow 1990 p.153). In short, she advocates a pluralistic methodology of social science that provides for an integrated interpretation of different theories which reflect a variety of epistemological positions.

Strong Anti-dualism

The 'strong' Dow position on methodology is to: (i) reject dualistic definitions of categories, as they ultimately lead to a single-perspective on phenomenon as distinct from a multi-perspective approach; and (ii) reject ethical relativism, as synthetic integration of theories in a multidisciplinary or pluralistic framework inevitably involves comparative judgement of metaphysical propositions reflected in the variety of epistemological propositions used to develop alternative theories.

This constrains the Babylonian mode to a synthesis of approaches that exclude theory developed from Cartesian thought. For example, general equilibrium studies of fiscal incidence would be excluded from consideration because it reflects Cartesian thought. Nevertheless, it should also be emphasised that non-Cartesian thought is not necessarily Babylonian, as pluralistic non-Cartesian systems need not reject ethical relativism, as required under Babylonian thought.

Moderate Anti-dualism

Mearman (forthcoming) has attempted to clarify some aspects of Dow's critique of Cartesian thought, and in the process has created a more moderate anti-dualism thesis. He draws on Dow's discussion of Hegelian opposites, as well as the discussion in modern philosophy of "poles" which treats bi-polar terms as opposites, to suggest that polar opposites may be associated with a continuum, with the opposites representing the two extremes of a continuum. For example, fiscal systems may reveal varying degrees of fiscal decentralisation, ranging from extremely centralised to extremely decentralised. Mearman's main contribution to the debate is his suggestion that poles can be transformed into duals when the continuum is conceptually split along some 'fault line'. For example, the binary classification of fiscal systems as either decentralised or centralised (or not decentralised).

Duals created from poles remain all-encompassing and are assumed to have "fixed meaning" in the sense that along some range the meaning is fixed at one point and open ended on the other. If it is assumed that categories are mutually exclusive, then fixed meaning of a: (i) *pure dual* defines x as "equal to" a point, or a bounded area, in Euclidean space; whereas (ii) a *derived dual* defines x as being either "greater

than or equal to”, some point on a ray which passes through Euclidean space, with “not x” defined as “less than” that point.³

However, *derived duals* are rarely “mutually exclusive”, rather they are generally “mutually constitutive”. For example, in the fiscal decentralisation example noted above, no fiscal system has been (or ever will be) purely centralised or purely decentralised. Innate human sentiment accommodates both socially and individually oriented conduct, which will ensure that enduring fiscal systems have a mix of what may be called centralised and decentralised elements. Consequently, reference to a centralised fiscal system necessarily incorporates some characteristics of decentralised fiscal systems that may form a subset of the fiscal functions associated with systems typically classed as fiscally decentralised. Therefore, in strict terms, *derived duals* do not meet the criteria of being “mutually exclusive”, rather they are “mutually constitutive”, and would not be formally categorised as a dual in the strong anti-dual case above using Dow’s definition.

However, as Mearman (forthcoming pp14-15) pointed out, Dow considers some “mutually constitutive” opposites and treats them as duals. Furthermore, she accepts some as legitimate on the grounds that they reflect distinctions that exist in reality (*microeconomics-macroeconomics*) and rejects others as illegitimate simply because they are mutually constitutive (*positive-normative*). Mearman’s response is to moderate Dow’s anti-dualism stance. While he accepts Dow’s position on the rejection of dualism when considering mode of thought and methodology, he nevertheless advocates a limited retention of *pure duals* and *derived duals* for temporary heuristic purposes as a means of imposing temporary order on complex reality for preliminary analysis to act as a prelude to more general, and non-dualistic, investigation.

3) Relevance of the Anti-dualism critique to Paretian Fiscal Sociology

The methodological critique related to the use of dualisms and Cartesian thought is relevant to Paretian fiscal sociology for a number of reasons.

First, Dow’s basic motivation in developing her critique is to liberate the social sciences from false determinism. Pareto, Sensini and Borgatta suggested that sociological approach to public finance should be developed for a similar reason: the pure theory of public finance had lost contact with the concrete fiscal phenomenon.

Second, both approaches develop methodologies that are explicitly pluralistic or multi-disciplinary.

Third, notwithstanding the similar motivation and joint advocacy of multi-disciplinary inquiry, very different stances emerged on the use of duals in the social sciences. As noted earlier, in her strong position, Dow rejected the use of duals. In contrast, Paretian fiscal sociology actually developed through extensive use of duals,

³ Alternatively, x can be “less than or equal to” to some point on a ray, in which case “not x” would be “greater than” that point.

although the duals used were not pure duals (they breach Dow's strict definition of a dual), but derived duals along the lines characterised by Mearman.

Fourth, largely as a consequence of the different perception of duals and their relevance for science, the two groups develop opposing views on the role of Cartesian thought. Dow rejects Cartesian thought totally, whereas Paretian fiscal sociologists accept it on the condition that it is complemented by a more general non-Cartesian (but not Babylonian) theoretical system.

Finally, while both approaches recognise that human action is influenced by, and interdependent with, values and sentiments, the Paretian approach studies the endogenous interaction between values/sentiments and the economic/social outcome of fiscal action from an 'ethically neutral'⁴ position which maintains ethical relativism. In contrast, the Babylonian approach treats value judgements as an inevitable factor of social theory, with the synthesis of different theories taken with regard to the epistemology associated with different theories. To some extent, this significant difference is attributable to the different scope of science with Dow, under the influence of Keynes, seeking to treat science as providing solutions to practical economic problems and the Paretians pursuing the development of general theory independent of practical problems.

As a consequence, even though the motivation of the two camps is to better link theory with reality, two very different methodological positions emerged.

4) Main Characteristics of Paretian Fiscal Sociology

The Italian tradition in public finances is composed of many distinct approaches. Mauro Fasiani ([1932-33] 1980), has suggested that the three main approaches are: (i) the hedonistic theories; (ii) the generically political theories; and (iii) the sociological-political theory. This third category was reserved for the fiscal scholars who followed Pareto in developing what Benvenuto Griziotti (1950: 342) subsequently called "la sociologia finanziaria" (fiscal sociology). This approach is most strongly linked to the studies of Gino Borgatta (1912, 1912-13, 1920, 1933, 1946) and Guido Sensini (1920a, 1920b, 1929, 1932), although aspects of this approach are also found in the work of Ettore Lolini (1928) Roberto Murray (1913, 1915) and Stanislaw Scalfati (1928, 1932). In addition, while leading Italian public finance scholars of the likes of Fasiani (1932-33 [1980], 1950) and Griziotti (1950, 1953) were not to embrace this particular Paretian form of fiscal sociology, they at least acknowledged the importance of the sociological context for treating the fiscal phenomenon and, in part, accepted Pareto's methodology as providing a guide for studies of the fiscal phenomenon.

The Paretian form of Italian fiscal sociology may be characterised by five main elements:

⁴ See Tarascio (1968) for discussion of Pareto's 'ethically neutral' approach to social science.

1. *fundamental aspect of the fiscal phenomenon*: the net redistribution of economic goods as a result of tax, spending and debt (fiscal redistribution);
2. *Implications of the fiscal phenomenon*: the implications of fiscal redistribution must be established with respect to:
 - (a). economic equilibrium
 - (b). social equilibrium
3. *Study of economic equilibrium*: The application of economic theory to the fiscal phenomenon provides some insight into the impact of fiscal activity on economic equilibrium; however, this is partial because there is interdependence between economic equilibrium and social equilibrium. Consequently, both economic and sociological analyses are required to gain an appreciation of the relationship between fiscal redistribution and economic equilibrium.
4. *Study of social equilibrium*: consider the stability or instability of movement in the social state in light of fiscal redistribution, with specific reference to the relationship between the governing elites and the non-elites (who are governed) and between speculators and rentiers.
5. *Methodological approach*: experimental approach consistent with the ontological distinction between logical action and non-logical action.

There is no suggestion here that Pareto, Sensini and Borgatta agreed on all aspects of fiscal studies. Significant differences emerged, and are discussed in McLure (2005, forthcoming). For example: both Sensini and Borgatta assigned a greater role to economic theory in fiscal studies than Pareto; Sensini focused on a general equilibrium approach to economic-financial equilibrium; Borgatta, who was far more pragmatic, accepted partial economic incidence analysis which was not accepted by Pareto; and Sensini's investigation of the fiscal phenomenon was quite broad, extending beyond fiscal redistribution and included technical-legal issues associated with specific fiscal events, with Borgatta (1933 and 1946) also coming to consider a broader range of legal and technical aspects of the fiscal phenomenon.

Nevertheless, the above five characteristics are representative of the major and defining elements that justifiably unite 'Paretian fiscal sociology' as coherent Italian approach to fiscal studies. In terms of the Babylonian critique of dualism, characteristics 3, 4 and 5 are particularly important.

Characteristic 3 suggests a clear role for Cartesian analysis, which makes room for an orthodox economics of public finance. Characteristic 4 qualifies the extent of the Cartesian analysis permitted because analysis of social equilibrium is undertaken on a non Cartesian basis. That is, the relationship between fiscal events and social equilibrium does not define equilibrium in commodity space once a fiscal event has redistributed economic goods across society. Rather, social equilibrium is defined with reference to the general stability, or instability, of the social state and the balance in the *derived dual* between individuals' rights and state's rights that prevails in a particular social state. Characteristic 4 is also indicative of other potential duals,

such as the distinction between *elites* and *non-elites* and between *speculators* and *rentiers*, which play a major role in non-Cartesian investigation into social equilibrium. Finally, Characteristic 5 implies that the distinction between logical action and non-logical action is not simply ontological: it also shapes the methodology of Paretian fiscal sociology. In particular, it determines when Cartesian analysis of the fiscal phenomenon is legitimate, and when it is not.

This serves to raise two fundamental questions. Is the Paretian methodology based on a dual? If so, does it fail for the reasons Dow outlines in her anti-dual thesis?

5) Duals in Paretian Methodology and Italian Fiscal Sociology

Many bi-polar terms are utilised in Paretian literature, especially in Pareto's writings (McLure 2003). Prima facie, they may appear to be *pure duals*, which requires that the binary categories meet Dow's three criteria: all-encompassing, mutually exclusive and with fixed meaning. However, when carefully considered, it is clear that Pareto's use of dual categories were deliberately not all-encompassing, and more often than not, deliberately not mutually exclusive.

In regard to the "all encompassing" criterion, it is important to interpret Pareto's use of dual categories in the context of his relativist methodological framework:

"the absolute has no place in logico-experimental science, and we must always take in a relative sense propositions that in the dress of ordinary parlance seem absolute. ... that much being clearly grasped, any misunderstanding is impossible, whereas to express ourselves with absolute exactness would be to wallow in lengthy verboriousities as useless as they would be pedantic" (Pareto [1916] 1935 p.57).

Consequently, while his economic theory is written as a closed system, Pareto recognised that the result is not all encompassing: economic theory deliberately abstracts from many factors that impact on the concrete phenomenon. To understand a 'real' economic phenomenon, Pareto insisted that it is necessary to go beyond economics by resorting "to other sciences and go into them thoroughly – not just incidentally – for their bearing on an economic problem" (Pareto [1916] 1935 p.1413).

In regard to the "mutually exclusive" criterion, it is insightful to consider the fundamental Paretian distinction between *logical* and *non-logical* action, which reflects a very particular view of human action in the real world. Unlike the conventional *pure dual* of *logical-illogical* (or *rational-irrational*) action, the Paretian categories 'logical action' and 'non-logical' action are not mutually exclusive. Action is logical when an actor's subjective intent and the objective end are either identical or

‘perfectly conformed’⁵, and non-logical when an actor’s subjective intent and the objective end are interdependent, and as such, neither identical nor perfectly conformed.

Importantly, non-logical action is not devoid of logic (non-logical action is not illogical action), it is just that there is an interaction between logic and sentiment. Non-logical action may be accurately viewed as pseudo-logical action which, objectively, may be quite similar to logical action. For example, Pareto’s logical conduct is not widely different from the sub-class of non-logical conduct that he labelled “4α”: the case where action is motivated by a subjective intent that is not identical to the objective end, but where the actor would accept the objective end if it was known to him or her.

What Pareto actually created was a *derived dual*, with human action exhibiting a combination of logical and non logical elements. That is, there is a continuum from strictly logical action to non-logical action based on differing degrees of interaction between logic and sentiment in choice. By using a *derived dual* to differentiate the types of action, Pareto set a methodological foundation for pluralism in the social sciences, with theories of logical action specified on a Cartesian basis and theories of non-logical action specified on a non-Cartesian basis. The very tight and formally restrictive definition of logical action is intended to prescribe a restricted range of human action that is treated in a Cartesian manner to static, or comparative static, issues. The broader continuum in the range of non-logical action is left to be treated using non-Cartesian analysis because the Pareto school recognised that Cartesian analysis of non-logical action would yield a false determinism.

An interesting feature of the Paretian approach is that the non-Cartesian approach was itself created by a system of *derived duals*. Pareto’s general sociology *per se* is beyond the scope of this study, but it is nevertheless clear that Pareto thought in dualistic terms, and the outcome of such thought contributed significantly to the originality and creativity of his contribution to social theory. Therefore, somewhat contrary to the general thrust of Dow’s thesis, dualisms (all be they derived and not pure) contributed significantly to Pareto’s development of non-Cartesian social theory. For example, the derived dualistic distinction between *ophelimity* (an exogenous index of pleasure from the satisfaction of tastes) and *utility* (an index of physical, social and emotional well being that is quantified endogenously) provided a basis for differentiating and linking economic and sociological analysis. *Ophelimity* is an analytical concept used by Pareto to facilitate Cartesian analysis because it is exogenous, and thereby enabling the dynamic phenomenon reduced to a static model. *Utility* (in the Paretian sense at least) is an analytical concept that facilitated non-Cartesian analysis of dynamic phenomena without false determinism. Analysis based on *utility* was necessarily non-Cartesian because Pareto recognised that to do otherwise would involve assigning a fixed metric to a concept whose very meaning and measurement changes with variations in the social state.

All of this can be linked back to the fundamental dualistic distinction between logical and non-logical action. For *logical action* Cartesian determinism is a realistic approximation because the objective end and subject end conform perfectly,

⁵ The phrase ‘perfectly conformed’ is used here to mean a *constant, enduring and stable relationship* when circumstances remain unchanged.

individual's ophelimity function is exogenously given and expected to remain stable and unchanged. For *non-logical action* Cartesian determinism is false determinism because the objective end and subject end do not conform perfectly and individual's utility function alters over time due to interaction between subjective end and objective purpose.

In regard to Pareto's general sociology, the list of *derived duals* used in the creative development of non-Cartesian analysis is substantial.⁶ In specific regard to fiscal sociology, few are more important than the *derived dual* for *speculators* and *rentiers*.

In practice, Pareto recognised that people exhibit varying degrees of willingness to take risk, and from this he derived a very broad dual between *speculators* (being those who yield high risk in their economic conduct) and *rentiers* (being those who yield low risk in their economic conduct). In "Lo Studio Scientifico dei Fenomeni Finanziari", Borgatta (1920) found that the general distribution of the fiscal burden involves a systematic bias, falling most heavily on middle class 'rentiers', with the fiscal outcome of patron-client relationships between political and economic elites tending to benefit speculators. The important original feature of Borgatta's work is his suggestion that this systematic bias in the uneven distribution in the fiscal burden has proved to be good for the material prosperity of society. That is, growth in public expenditures caused long term growth in private wealth because the static economic welfare loss caused by 'fiscal' redistribution is generally more than offset by the increased propensity for a higher level of risk in economic activity, which is made possible by fiscal redistribution in favour of risk taking speculators. He also argues that fiscal activity, and the 'extra-economic' redistribution, is greatest during the boom period of economic cycles. Consequently: (i) rentiers bear a disproportionately share of the fiscal burden (either through taxes⁷ or debt), especially during the expansionary economic phase and mainly to the benefit of speculators; and (ii) the short term interaction between economic and fiscal cycles, with greater fiscal redistribution undertaken during booms, contributing to long term economic growth.

For the purpose of this study, the point is not so much the merit, or otherwise, of Borgatta's analysis, but the fact that the type of analysis that emerged was original, non-Cartesian and developed from a *derived dual*. Moreover, Borgatta's (1920, p. 96) inspiration for his non-Cartesian analysis of the relationship between the per capita wealth of society and fiscal action derives clearly from Pareto, as Borgatta refers to Pareto's comments suggesting that marginal analysis (of rates of change at a particular point) yields a false precision when considering growth in relations to variations in the proportions of individuals rich in Class I and II residues (e.g. the distribution of high and low risk takers) in a given society⁸.

A unique feature of this approach is that duals were used to isolate the substantial underlying regularities of a social aggregate, and not to highlight the precise form of the social state which would be attempted if Cartesian analysis was

⁶ Important context specific examples include *intrinsic-extrinsic*, *Class I* and *Class II* residues, *residues-derivations*, *foxes-lions*. The presenter plans to examine the full relevance and creative importance of derived duals in Pareto's General Sociology in a future paper.

⁷ While income taxes may be 'progressive', the net impact of the tax system, especially after sales taxes are considered as anything but progressive, falling mainly on middle class rentiers.

⁸ Borgatta (1920, p. 96)

applied. For example, the Paretian relationship between *rentiers* and *speculators* is used to investigate change in material prosperity of the aggregate over time, and not individual's ophelimity in commodity space at a particular point of time. Similarly, Pareto's use of the *derived dual 'individual-collective'* is intended to reveal the substantial and underlying balance of power (between individual's rights and the state's rights) prevailing in a particular social aggregate, which again is too general an issue for Cartesian analysis which would attempt to consider detailed aspects of the prevailing social form.

Nevertheless, in spite of developing a non-Cartesian mode of analysis, Paretian fiscal sociologists do not completely reject pure public finance. Borgatta, for example, considered economic movement related to fiscal events between two points in time, which he did in two complementary ways: first, by using comparative economic statics to consider the economic impact of specific fiscal events on the presumption that the social equilibrium, and hence individuals' ophelimity, is unaltered by the fiscal events under consideration; second, using comparative sociological statics to consider whether fiscal events have altered the social state (e.g. has stability of sociological equilibrium changed, and if so, how has this altered utility). The first 'Cartesian' step is based on the economics of public finance (logical conduct based on notion ophelimity given exogenously under the initial social equilibrium). The second 'non-Cartesian' step is intended to determine whether redistribution of economic goods attributable to fiscal events has altered either the individual's or the governing elite's assessment of utility (i.e. whether non-logical conduct in the field of fiscal activity causes an endogenous change in the standard by which utility is assessed).

Finally, it is necessary to consider one major difference between the non-Cartesian aspect of Paretian fiscal sociology and Babylonian thought. As noted earlier, the Paretian approach continues to insist on ethical neutrality and ethical relativism in pluralistic social science, whereas Babylonian thought rejects ethical relativism. In short, the philosophies of science associated with the Pareto school and Babylonian thought are in fundamental conflict over the role of ethics in the social sciences.

This difference does not appear to be a consequence of the greater methodological sophistication of the more modern Dow-Mearman approach (reflecting an up-to-date understanding of the sociology and philosophy of knowledge) relative to the simpler and much older Paretian approach (which is now a generally considered as a superseded approach to social theory). This is because Pareto was astute enough to recognise that all knowledge reflects subjective judgement; it is just that objective knowledge has, in relative terms, a low level of subjectivity (Pareto [1916] 1935, pp.76-77). As a consequence, the laws of social science were recognised as being influenced by values, although ethical neutrality remained the ideal scientific goal. Pareto's considered the current level of 'objective' knowledge as a benchmark derived from observations, but with knowledge and related observations constrained to the "limits of time and space known to us" (Pareto [1916] 1935, p. 51), with metaphysical elements of theory progressively expunged by scientific progress.

However, there is no presumption in Paretian ontology that experimental science necessitates an atomistic view of the world. His sociology utilised many

experimental categories that were holistic (many of the classes and sub-classes or residues), and which had no obvious mechanism for subsequent reduction for atomistic analysis.⁹ The only criterion is observation, which should be as value-free as the current state of knowledge permits. This limits the type of pluralism associated with Paretian fiscal sociology to a synthesis of ‘experimental’ (i. e. based on observation) Cartesian and Non-Cartesian theories, all of which aim to minimise the role of value propositions in interpretations. In contrast, the Babylonian approach seeks a synthesis of non-Cartesian approaches (on the grounds that Cartesian approaches have lost contact with reality) without seeking to minimise value propositions in science, only to make the role of such values in interpretation explicit.

Conclusion

It is concluded that the combination of non-Cartesian and Cartesian approaches to fiscal sociology and public finance in Italy that developed under the influence of Vilfredo Pareto are largely immune from Dow’s strong critique of Cartesian thought. Duals were utilised by the Pareto school, but always within a relative context (they are never all inclusive: theory is only a relative approximation of fact) and they were rarely mutually exclusive (generally they are mutually inclusive). Cartesian analysis is only one, limited and qualified, aspect of the Paretian approach, and the fiscal sociology that emerged in Italy was grounded in a sophisticated framework that accommodated methodological pluralism where duals were employed in a manner similar to that advocated by Mearman in his moderate anti-dualism critique.

While the Babylonian methodology may well provide insights into analysis based on Cartesian thought used in isolation, as well as reasoned advocacy of realism and pluralism in social science, it does not provide a basis for rejecting the pluralistic combination of non-Cartesian and Cartesian thought of the Pareto school in Italy.

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⁹ However, it should be noted that Borgatta (probably the leading and most original of the Paretian Fiscal Sociologists) did not share this view, and was an advocate of atomism in fiscal studies (see Borgatta 1920, p.11).

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